

Returning to the job after childbirth

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A key family event, the birth of a child has important implications for the mother and the family. But childbirth also has a broader impact, especially in today's economy. Women now make up almost half of the work force, so any wholesale withdrawal by them would have major repercussions at both the micro-economic and the macro-economic levels. To better understand how new mothers balance career and domestic duties, researchers have paid particular attention to post-childbirth employment and earnings and their relationship with job-protected maternity leave and benefit systems.

One study found that about 60% of new Canadian mothers returned to work within six months of giving birth, and about 90% returned to work after one year (Marshall 1999). Another study suggested that maternity benefits (from Employment Insurance) increased the propensity for new mothers to take job leave, while job-protected maternity leave helped mothers return to the pre-childbirth employer (ten Cate 2000). A more recent study concluded that a modest expansion of job-protected maternity leave does not increase the time new mothers stay at home, whereas a substantial expansion of the system does increase the time (Baker and Milligan 2005).

In terms of the effects of childbirth on earnings, estimates of the income difference between Canadian mothers and childless women range from about 13% (Phipps et al. 2000) to a 4 to 5% wage penalty for young mothers after controlling for the differences in work history, labour force attachment, individual worker characteristics and job attributes (Drolet 2002).

Because of data constraints imposed by cross-sectional surveys, most previous research has focused on the short-term effects of childbirth on the employment of mothers. Longer-term effects can best be examined with longitudinal data sources. Using Statistics

Canada's Longitudinal Worker File, this article examines both the short- and the long-term effects of childbirth on the employment, job mobility and earnings of Canadian mothers over the past two decades (see *Data sources and definitions*).

Statutory maternity leave affects post-childbirth employment rates

If a mother stays home for an extended period after childbirth, her propensity to work in the future may be reduced since a long career interruption can affect job skills and chances of finding a new job. The percentage of mothers who return to work in the first post-childbirth year provides a measure of the short-term employment effect of childbirth.² Similarly,

Data sources and definitions

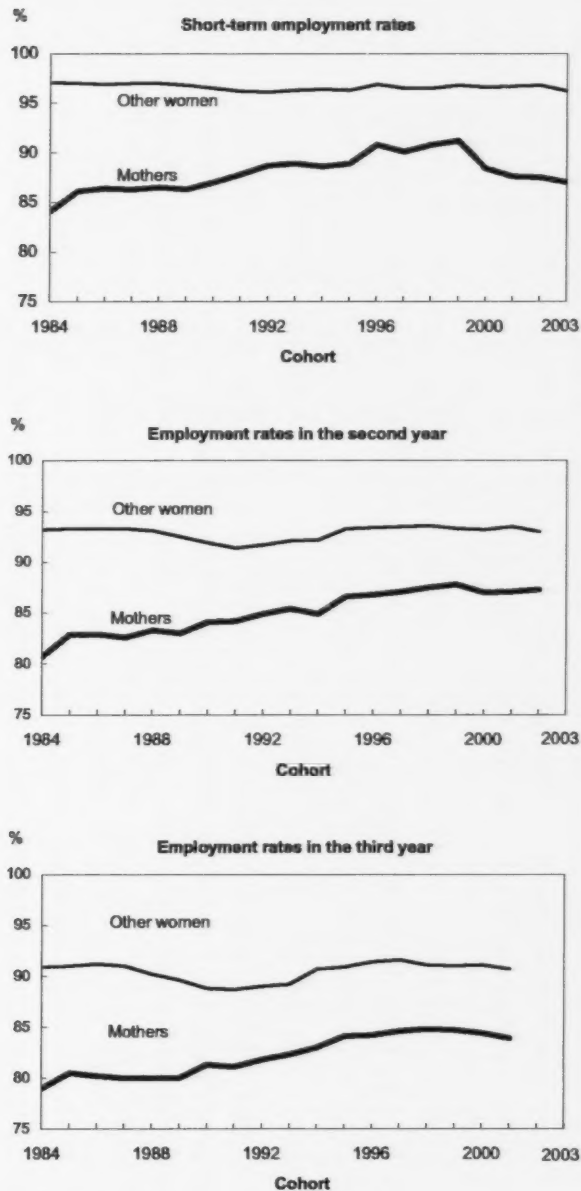
The Longitudinal Worker File (LWF) is a 10% random sample of all Canadian workers, constructed by integrating data from the Record of Employment (ROE), the T1 and T4 files, and the Longitudinal Employment Analysis Program (LEAP). The ROE indicates the reason for a job interruption, of which maternity leave is one. The resulting numbers compare well with those from Statistics Canada's Survey of Labour and Income Dynamics, which covers 1993 to 2004.¹

The mothers in this study sample were aged 20 to 39 in the year they gave birth, they were employed before taking maternity leave and experienced no other job separation that year, and in the previous year they worked and did not give birth. These restrictions allow the construction of 20 cohorts of mothers (beginning with the 1984 cohort and ending with the 2003 cohort)—with a sample of nearly 300,000 observations. They represent about 86% of all employed women who became mothers in the 1984 to 2003 period.

For each cohort of mothers, a comparison group was established. This cohort of other women satisfied the same restrictions as the mothers, except for giving birth. The comparison group provides a check whether changes in employment or earnings are due to the business cycle, since economic fluctuations should have similar effects on both mothers and the otherwise identical group of women.

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Chart A Employment rates of mothers consistently lower than those of other women



Source: Statistics Canada, Longitudinal Worker File.

employment rates in subsequent post-childbirth years measure the longer-term effects (Chart A).³ The corresponding employment rates for other women provide a comparison.⁴

Both long- and short-term employment rates of mothers were consistently lower than those of other women. For example, the short-term employment rate of the 1984 cohort of mothers was 84%, 13 percentage points below that of other women. While the employment rate of the 2001 cohort of mothers in 2004 (the third post-childbirth year) was 84%, the corresponding employment rate of their comparison group was 91%. Since the birth of a child increases the marginal costs and reduces the marginal benefits of working, it is not surprising that the post-childbirth employment rates of mothers were generally lower than those of other women.

The short-term post-childbirth employment rates of successive cohorts of mothers increased from the mid-1980s to the end of the 1990s and then started to decline in the early 2000s. For example, for the 1984 cohort of mothers, the employment rate in the first post-childbirth year was 84%. The employment rate reached 91% for the 1999 cohort of mothers, and then dropped to between 87% and 88% for the early 2000s cohorts. This suggests a non-linear relationship between short-term post-childbirth employment rates and the benefits of the job-protected maternity system (see *Job-protected maternity leave*). When protection is short, employment rates of new mothers in the first post-childbirth year are low. When protection is extended moderately, post-childbirth employment rates increase. But when protection is substantially extended to a year or longer, short-term post-childbirth employment rates decline.⁵

The non-linear relationship can be easily explained. Many factors affect a woman's willingness to return to work in the months following childbirth: the scarcity and cost of infant care; the desire to continue breastfeeding; and anxiety about leaving their infant in the care of others. As a result some women with shorter protected maternity leave may choose to stay home and give up their pre-childbirth jobs. Consequently, they would have to look for new jobs when they were ready to return to work and then might face a period of unemployment. But when the job-protected maternity leave becomes moderately long, as occurred during the 1990s in Canada, the above factors would disappear or at least be subdued and post-childbirth employment rates would increase.

Job-protected maternity leave

Job-protected maternity leave legislation in Canada is under provincial jurisdiction. In the 1980s, Canadian mothers had 17 or 18 weeks of job-protected maternity leave within which time their employers were legally obliged to give pre-childbirth jobs back to eligible mothers. In the early 1990s, leave was extended to between 29 and 52 weeks in all provinces except Alberta and Saskatchewan. By the early 2000s, pre-childbirth jobs were protected for 52 to 54 weeks in nine provinces; mothers from Quebec have had a 70-week leave since 1997.

But when the system is extended to more than a year, it becomes feasible for some mothers to take the whole first post-childbirth year off and still retain rights to their pre-childbirth jobs. For example, about 29% of mothers who gave birth in 2000 were from Quebec, Manitoba and New Brunswick. Under their provincial legislation, Quebec mothers were able to retain their pre-childbirth jobs for up to 70 weeks; Manitoba and New Brunswick mothers were able to do so for 54 weeks. Thus, Quebec mothers who gave birth from the second half of August to December, and mothers from Manitoba and New Brunswick who gave birth in the second half of December 2000, were all able to remain off work for all of 2001 and return to their previous jobs as of January 2002—hence the decline in the short-term employment rates for the 2000 cohort. The same explanation applies to the declines in the short-term employment rates of the 2001 to 2003 cohorts.⁶

The long-term post-childbirth employment rates of Canadian mothers increased steadily from the mid-1980s to 1999. A slight decline occurred thereafter. Since the employment rates for the corresponding comparison group also declined after 1999, the leveling off was likely not related solely to childbirth.

Long-term withdrawal rates by Canadian mothers provide an alternative measure for the post-childbirth employment patterns for Canadian mothers.⁷ Women who gave birth were less likely to withdraw from the labour market during post-childbirth years in the early 2000s than in the mid-1980s. For example, about 8% of mothers who gave birth in the mid- and late 1980s withdrew from the labour market in the first three post-childbirth years, but in the late 1990s and early 2000s the figure was less than 6%.

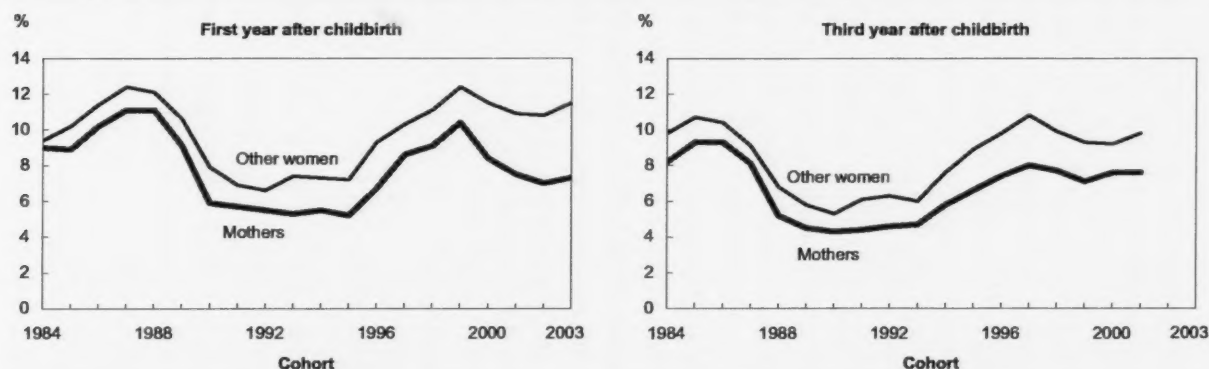
Returning mothers less likely to quit

The birth of a child raises work-family balance issues for parents, particularly mothers. Although the tradition that women withdraw completely from the labour market upon giving birth has long gone, some mothers may still quit their jobs due to work schedule inflexibility, commuting difficulties, or lack of child care services.

Quit rates of new mothers and other women both fluctuated over time: mothers who gave birth during the downturn of the economy had lower quit rates than mothers who gave birth during the booming years. But more importantly, when compared with other women, mothers' quit rates, short- or long-term, economic downturn or upturn, were consistently lower, and the differences became more evident over time (Chart B). For example, in the mid-1980s, quit rates of new mothers in the first post-childbirth years were generally below those of the reference group by about 1 percentage point, and by the early 2000s, the difference had increased to more than 3 points.

Mothers having lower quit rates than other women could be anticipated since rates were measured for a group of women who returned to the labour market after giving birth. Those who had not yet returned to work were not part of the population upon which the quit rate is calculated. And on average, it is not unreasonable to assume that mothers who returned to the labour market had stronger labour market attachment, stronger career motivations, or more productive job matches than mothers who had not returned to work (and some of whom may never return), particularly in the longer term. In other words, the quit rates for mothers are defined using mothers with relatively strong labour market attachment and, hence, their quit rates were below the average of other women.

But why the increased differences in quit rates between mothers and other women in the early 2000s compared with the mid-1980s?⁸ In part, this can be attributed to the longer job-protected maternity leave system, which helps improve the job-worker match quality. With short job-protected maternity leave, the economic and emotional costs of a quick return to work will convince some women—particularly those with a poor job match—to remain at home. But with longer job protection, it becomes feasible for some mothers to invest time searching for a new job match, knowing they can still return to their

Chart B Quit rates of mothers consistently lower than for other women

Source: Statistics Canada, Longitudinal Worker File.

pre-childbirth jobs within a given period. Then those who find a new job likely obtain a better job match and their probability of quitting their new jobs is low. Those who choose to return to their pre-childbirth jobs would be more certain about their jobs and they should also be less likely to quit in subsequent years.⁹

Standard human capital theory suggests that returning to the same employer implies little loss of firm-specific human capital or job tenure, particularly for those who returned to their pre-childbirth jobs relatively quickly. Hence, it is interesting to directly examine the proportion of new mothers working for their pre-childbirth employers during post-childbirth years (Chart C). Of course, the likelihood of working for the same employer, for both mothers and other women, was affected by economic fluctuations primarily because less outside opportunity is available in economic downturn than upturn. However, more revealing is that, before 1992, Canadian mothers were slightly less likely to return to their pre-childbirth employers than other women during the first post-childbirth year, the difference being around 2 percentage points. But since 1992, the proportion of new mothers staying with their pre-childbirth employers rose to the same level as that for other women, and from 2001, new mothers became somewhat more likely than other women to stay with their employers.

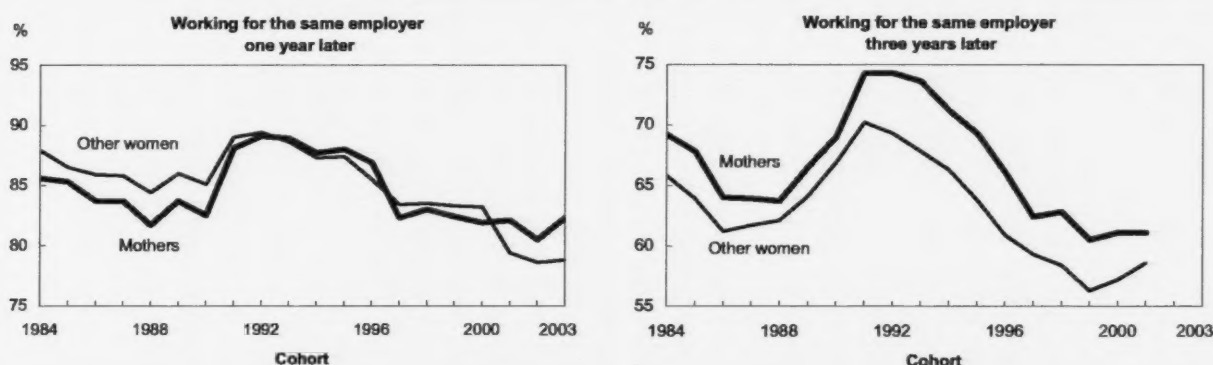
In terms of the proportion of women staying with the same employers in the longer run, successive cohorts of new mothers were more likely than the reference

group to stay with their pre-childbirth employers and the differences stayed relatively constant over the past twenty years. One reason might be that mothers with young children were less mobile than women from the comparison group, the presence of young children perhaps making job change difficult. For example, some working mothers with young children need to make new child care arrangements when changing employers, while for the comparison group (women without children) such a barrier does not exist.

Short-term earnings drop steeper with extended maternity leave...

A simple way to measure the effects of childbirth on the earnings of mothers is to compare their pre- and post-childbirth earnings. This helps answer some interesting questions about the size of immediate earnings drops, the time required to regain pre-childbirth earnings, and the evolution of the earnings recovery process over the last twenty years.

The advantage of this approach is that it requires no strong sampling restrictions and thereby allows the use of a wide sample of Canadian mothers. The main disadvantage is that a simple comparison of pre- and post-childbirth earnings does not reveal the true earnings effects of childbirth since it is not known how earnings would have grown otherwise. Nevertheless, the comparison provides a rough guide to the earnings effects of childbirth.

Chart C Mothers more likely to remain with the same employer

Source: Statistics Canada, Longitudinal Worker File.

Earnings drops for Canadian mothers were quite strong during the year of childbirth and in the first post-childbirth year, and these drops tended to increase over time (Chart D). During the 1980s, the birth of a child lowered earnings by about 28% in the year of childbirth. This increased to 30% in the 1990s, and to about 33% after 2000. And for the first post-childbirth years, the earnings drop relative to the pre-childbirth level was between 14% and 18% before 2001, but about 37% to 39% since then.

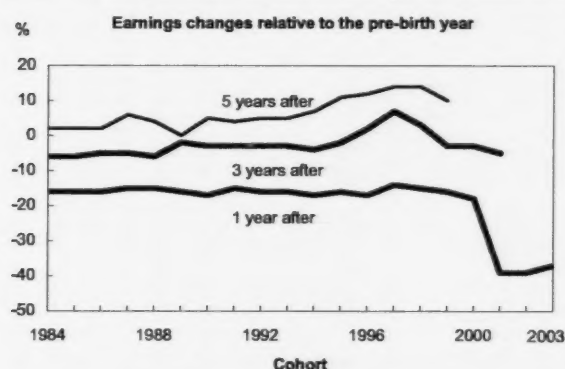
The earnings drops in the year of childbirth and in the first year thereafter were mainly the result of changing maternity leave benefits. Prior to 1991, the maximum duration of maternity leave benefits was 15 weeks. Those who gave birth in the first 37 weeks of a year would have been able to collect all of the benefits within the year of childbirth. Assuming childbirth to be uniformly distributed over the year, this group of mothers would account for about 70% ($37 \div 52 = 0.71$) of mothers who gave birth within that year. If they all exhausted their maternity benefits (by collecting for 15 weeks) and had no other earnings interruptions, they would have lost about 30% of their potential earnings ($15 \div 52 = 0.29$). Mothers giving birth in the last 15 weeks of the year would have incurred less than a 30% earnings drop during the childbirth year, but they would have incurred some earnings drop in the next year.

Similar calculations can be made for other cohorts of mothers. In particular, the large earnings drops in the first post-childbirth year for the 2001 to 2003 cohorts of mothers can be easily understood because, beginning in 2001, Canadian parents (primarily mothers) were able to receive Employment Insurance (EI) benefits for up to 50 weeks.¹⁰ Then, those who gave birth in the early part of a year were able to collect the benefits for almost a whole year, and, as such, the earnings drop during the year of childbirth was now higher than that for mothers who gave birth before 2001. Those giving birth in the second part of the year could continue to collect benefits for a significant part of the first post-childbirth year. And indeed, those giving birth at the end of a year could rely on EI benefits for most of the first post-childbirth year—hence the higher earnings drops in the first post-childbirth year.

...but longer-run recovery is stronger

Earnings of the 1990s and early 2000s cohorts of mothers also recovered faster than those of the mid-1980s cohorts. For example, for the mid-1980s cohorts of Canadian mothers, the earnings five years after childbirth were only slightly above their pre-childbirth earnings. But for mothers who gave birth after the mid-1990s, earnings five years thereafter were generally higher by 10% or more. The faster earnings recovery in the early 2000s may be explained by fac-

Chart D Mothers' earnings recovering more quickly in recent years



Source: Statistics Canada, Longitudinal Worker File.

tors such as higher education attainment, stronger labour market attachment, greater career motivation and longer job protection. Longer job protection might result in more appropriate job matches, while factors like higher education attainment are associated with steeper earnings growth. On the other hand, longer job protection will also result in longer future work interruptions for subsequent children, which likely accounts for the slight downturns in the 3-year- and 5-year-after curves.

Summary

Long-term post-childbirth employment rates of successive cohorts of Canadian mothers have increased relatively steadily over the last two decades. While short-term post-childbirth employment rates also increased from the mid-1980s to the end of the 1990s, they dropped for the early 2000s cohorts of mothers. Canadian mothers were less likely to quit, and more likely to stay, with their pre-childbirth employers in the post-childbirth years than women from the comparison group. Although earnings drops were greater for the early 2000s cohorts of mothers than for the mid-1980s cohorts, the earnings recovery process was shorter.

Unobserved factors like career motivation resulting from increasing education attainment, as well as institutional factors like an increasingly generous job-

protected maternity leave system, have all played important roles in the evolution of post-childbirth employment and earnings trajectories of Canadian mothers during the last two decades.

Perspectives

Notes

1 Details can be obtained from the author or the forthcoming research paper.

2 A woman is defined as employed in a year if she had earnings from one or more paid jobs during that year.

3 The horizontal axis of the figure represents different cohorts of mothers and non-mothers. It also measures time (year) implicitly. For example, the 84% for the 1984 cohort of mothers indicates the employment rate of this cohort of mothers in 1985 (the first post-childbirth year). Chart A contains the employment rates in the other post-childbirth years. The employment rates for the comparison groups can be found in the longer version of this study, to be published shortly. Note that these rates will differ considerably from those derived from the Labour Force Survey.

4 Women from the comparison group are also referred to as non-mothers or other women. These were women who did not give birth within the same period of time.

5 This echoes the finding of Baker and Milligan (2005) that a moderate expansion of the job-protected maternity leave system does not increase the time new mothers spend at home, while a significant expansion of the system does increase this time.

6 Probit analyses on both the short- and long-term employment of mothers controlled for age, cohort, employer size, previous earnings and province—none of these variables could explain the employment differences between mothers and other women.

7 A mother is a withdrawer in three (five) post-childbirth years if she did not receive any earnings in those years. A mother who does not work in the first post-childbirth year might just be taking her job-protected maternity leave, and not withdrawing from the labour market.

8 Probit analyses suggest that most of the differences observed in Chart B remain after controlling for age, cohort, industry, firm size, province, etc.

9 Strong labour market attachment and career motivation as a result of increased education attainment may also play an important role in the lower long-term quit rates for the mothers in the long run. But these cannot explain the large decline in the short-term quit rates for the early 2000s cohorts

of mothers since there were no data indicating these factors changed suddenly in the early 2000s.

10 Thirty-five of the 50 weeks (parental leave) can be used by either the mother or the father. In 2002, less than 10% of parental leave benefits went to fathers.

■ References

- Baker, Michael and Kevin Milligan. 2005. "How Does Job-Protected Maternity Leave Affect Mothers' Employment and Infant Health?" National Bureau of Economic Research Working Paper No. 11135. 57 p.
- Drolet, Marie. 2002. "Wives, Mothers and Wages: Does Timing Matter?" Statistics Canada Catalogue no. 11F0019MIE2002186. Ottawa. Analytical Studies Branch Research Paper Series, no. 186. 25 p.
<http://www.statcan.ca/english/research/11F0019MIE/11F0019MIE2002186.pdf> (accessed November 20, 2007).
- Marshall, Katherine. 1999. "Employment after childbirth." *Perspectives on Labour and Income*. Vol. 11, no. 3. Autumn. Statistics Canada Catalogue no. 75-001-XPE. p. 18-25.
<http://www.statcan.ca/english/studies/75-001/archive/c-pdf/c-9932.pdf> (accessed November 20, 2007).
- Pérusse, Dominique. 2003. "New maternity and parental benefits." *Perspectives on Labour and Income*. Vol 4, no. 3. March. Statistics Canada Catalogue no. 75-001-XIE. p. 12-15.
<http://www.statcan.ca/english/freepub/75-001-XIE/0030375-001-XIE.pdf> (accessed November 22, 2007).
- Phipps Shelley, Peter Burton and Lynn Lethbridge. 2001. "In and out of labour market: long-term income consequences of child-related interruptions to women's paid work." *Canadian Journal of Economics*. Vol. 34, no. 2, p. 411-429.
- Statistics Canada. 2006. *Report on the Demographic Situation in Canada 2003 and 2004*. Statistics Canada Catalogue no. 91-209-XIE. 115 p.
<http://www.statcan.ca/english/freepub/91-209-XIE/91-209-XIE2003000.pdf> (accessed November 20, 2007).
- ten Cate, Adrienne. 2003. "The Impact of Provincial Maternity and Parental Leave Policies on Employment Rates of Women with Young Children in Canada." McMaster University, Hamilton. Department of Economics Working Paper Series no. 2003-03. 48 p.
- Zhang, Xuelin. (forthcoming paper) "The post-childbirth employment of Canadian mothers and the earnings trajectories of their continuously employed counterparts: 1983-2004." Statistics Canada. Ottawa. Analytical Studies Branch Research Paper Series.